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Seasonal Employment Fluctuations In Florida: 1947 - 1956

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Since World War II, over-all employment in Florida has been characterized by rapid growth and pronounced seasonal fluctuations. During the period covered by this analysis, 1947 through 1956, average monthly employment increased from 378,480 to 630,298. In each of the nine years employment in Florida grew at a more rapid rate than in the United States. The annual difference was especially noticeable in the 1954 recession when Florida employment increased 4.5 per cent, while in the country as a whole it declined 2.5 per cent. The average annual increase for the nine-year period was 2 per cent for the United States and 5.9 per cent for Florida.

Table 1 shows total monthly employment in Florida for the years 1947 through 1956. These figures reveal that employment reached its yearly peak in December with the exception of the years 1948 and 1949. January, February, and March were the other months in which employment was well above average. Correspondingly, it may be noted that in each year fewer workers were employed in July than in any other month except in 1948 when August showed the smallest employment. Employment was low also in June, August, and September. Data compiled by the Florida Industrial Commission show that the pattern of seasonal change has been very stable since World War II.

In 1949 employment in Florida declined as it did in the nation as a whole, but an examination of the monthly employment figures in Table 1 reveals that after 1949, employment in corresponding months increased successively over the period. After 1949 it was true also that the total number employed in the last month of the year was greater than the total number employed in the first month of the year. This in part reflects the continuing growth during each year in the number of people employed, and this growth tends to obscure to some extent the changes in monthly employment within each year that result from seasonal influences.

Seasonal fluctuations in employment are important not only to the workers and employers in the affected industries, but to the communities in which such industries operate. To the workers, unstable employment means the loss of wages and a feeling of insecurity; to the employers, the necessity of recruiting and training a temporary labor force. Businesses not directly affected by seasonal employment fluctuations experience declining sales during seasonal layoffs. During these periods, public assistance expenses increase, as do demands on private charities. Dramatic examples of the acute problems created by unemployment due to seasonal factors occurred in Florida in the winters of 1957-58 and 1959-60 when extensive frosts reduced agricultural employment so drastically that emergency conditions existed in some areas.

A careful examination of the seasonal changes in employment occurring annually over a period of years makes it possible to determine not only the number of seasonally unemployed workers in particular areas but also the extent to which different kinds of businesses contribute to these conditions. With this type of factual information the economic impact can be ascertained and the possible solutions can be considered. In recent years, the maintenance of reasonably full and stable employment has become a generally accepted social goal. The people of Florida have recognized the importance of this objective. In 1937, the legislature passed the Florida Unemployment Compensation Act — the basis for state-federal cooperation in this field. While the Act's primary purpose is to aid workers who are unemployed through no fault of their own, Subsection 6 of Section 443.12 of the Florida Statutes directs the Florida Industrial Commission to take appropriate steps to reduce and prevent unemployment.

The Industrial Commission and the Florida State Unemployment Service compile employment data relating to the state as a whole and to the more populous counties and cities. Over the years, much information has been developed relative to the seasonal variations of over-all Florida employment, of employment in the major business groups, and of employment in the areas of the state in which seasonal unemployment is most acute. However, these data have generally been classified by broad cate-

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gories which conceal the employment by specific kinds of businesses such as department stores, hotels, eating and drinking places, barber and beauty shops, and the like; yet these are the ones contributing to most of the seasonal fluctuations in Florida employment.

In order to secure employment data in sufficient detail to reveal the effects of many types of businesses, special tabulations were prepared for this analysis from the records maintained by the Reports and Analysis Department of the Florida Industrial Commission. The detailed employment figures are based on the quarterly reports showing monthly employment which are filed by certain employers under the provisions of the Florida Unemployment Compensation Act. Some characteristics of these data, however, limit their usefulness in measuring Florida employment. For the purposes of this study the greatest weakness is the exclusion from these data of firms employing less than eight persons, for small units are common in both the retail trade and service industries. The data also exclude certain categories of employment. The most important of these groups are agricultural workers, self-employed persons, and government employees. These exclusions affect the analysis of total Florida employment but not employment in the retail trade and service groups.

Since the data are for the entire state, another deficiency is that area differences in seasonal fluctuations are hidden. This is a significant factor in looking at the retail trade and service industries because winter is the most important tourist season in south Florida, while tourism reaches its peak in the northern resort areas during the summer months. Despite the lack of complete coverage, however, these employment figures appear to be sensitive to changes in the state's economic activities. Over the years, the monthly employment figures have fluctuated in response to business cycles, industrial growth, and seasonal influences.

The present analysis examines the long-established assumption that the seasonal fluctuations in certain types of business activity are more pronounced than in others, or are dissimilar, so that they are the primary causes of the seasonal fluctuations in total Florida employment. Such measures of economic activity as monthly employment and monthly retail sales data suggest the validity of this generalization. However, since existing information on employment and retail sales has not been adjusted to eliminate the influences of growth in employment, such data have not made it possible to identify precisely the seasonal influence which individual kinds of businesses exert on the over-all employment in the state. By the utilization of a technique to isolate the seasonal components in the employment data in the present analysis it is possible to observe the extent to which selected kinds of business have contributed to the seasonal fluctuations over the entire period from 1947 through 1956 as well as in each of the years within the period.

The period from 1947 to 1956 was chosen because employment was not distorted by wars or major depression, and it seems representative of employment conditions in Florida. Comparable data are available also for the entire period and the time span is sufficiently long to show possible changes in the seasonal variations of employment.

Attention is centered on the seasonal employment fluctuations in ninety-one different types of business in the retail and service trades. In addition, the data for total Florida employment were analyzed to determine the basic pattern of seasonal employment fluctuations in the state. As noted earlier the employment data, as recorded without any adjustments, contain the influences of long-run trend and cyclical variations. In order to remove the effects of these influences and thereby isolate the seasonal components of the data, the well-established ratio-to-moving-average method was utilized. Ratios or seasonal relatives developed by this technique show seasonal and also irregular fluctuations. To develop an average or typical seasonal pattern for all of the years combined, the median seasonal relative for each month was computed. This averaging removed most of the random fluctuations and produced a single value for each calendar month. These twelve values are the seasonal indexes and show the variations caused by seasonal influences.

As the study progressed the need became apparent for a value to measure the seasonal effect by each kind of business or total Florida employment. Such a value called the seasonality factor was developed.

In summary then, the statistical techniques utilized in the present analysis are designed to measure the influence of seasonal conditions on employment. The three measures used are the seasonal relative, the seasonal index, and the seasonality factor. The **seasonal relative** is shown as a percentage and is designed to show the extent that employment in any group or kind of business, in any given month, in any year during the period under study, is above or below the average employment during the year under examination. The **seasonal index** is a measure of the relative seasonal position of employment in a given month for the entire period. This is shown also as a percentage figure. The **seasonality factor** is the average amount of employment a given type of business or an industry adds to or subtracts from the monthly seasonal swing above or below the average total employment.

Seasonality of Florida Employment

The seasonal relatives, the percentage relationships which show the comparative monthly employment in each year, emphasize the stability of the seasonal employment pattern in Florida for the years 1948 through 1955. April, May, and November had the same rank in each year. January showed the widest variation, ranking first, second, and third in various years during the period. The seasonal index, which is the composite index for the entire period, is shown in Table 2. This measure reveals that Florida employment due to seasonal causes was above average in five months, below average in six months, and was unaffected in November. The seasonal index has a range of 14.0, from a high of 107.4 in February to a low of 93.4 in August. By comparison, an index of civilian employment in the United States for the years 1946-1953 (constructed by a different method) has a range of 5.8 per cent.

Average monthly employment in Florida for the period 1947 through 1956 was 472,418. The calculated average monthly employment for the entire period shows that seasonal factors caused employment to range from 34,959 above average in February to 31,180 below average in August. An examination of the monthly seasonal relatives for each of the years 1948 through 1955 shows that the magnitude of the seasonal employment fluctuations has declined. The range of the seasonal relatives was 17.6 in 1948, with February being the month of highest employment when it stood at 109.1, and July the month of lowest employment, at 92.4. By 1955 the range had declined to 12.1 when employment in January and March stood at 106.4 and in July at 94.7. This constitutes an over-all decrease of 31 per cent or 5 per cent annually.

To determine the change not only on the basis of the percentage relationships as has just been shown, but also on the actual number of workers affected by seasonal employment fluctuations during the period studied, varia-

TABLE 1.—TOTAL MONTHLY EMPLOYMENT IN FLORIDA, 1947-1956
(In thousands)

Months	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
January	412	425	416	418	466	493	529	550	590	637
February	409	423	416	422	473	497	534	553	597	646
March	405	415	410	419	472	497	529	548	600	646
April	380	399	392	411	455	485	513	543	587	633
May	363	379	368	394	435	461	493	516	565	615
June	357	370	355	390	428	456	485	500	560	610
July	344	361	348	385	417	446	475	495	552	603
August	348	360	351	394	420	447	477	498	558	608
September	353	367	356	397	421	452	480	503	561	610
October	370	376	365	405	432	462	491	514	575	621
November	390	396	385	422	453	484	516	542	600	649
December	412	415	412	450	480	514	541	572	632	685

Source: Figures for 1947 were obtained from the Florida Industrial Commission. Figures for 1948 through 1956 are from *Florida Employment and Payrolls* for those years.

TABLE 2.—SEASONAL INDEXES OF TOTAL EMPLOYMENT AND OF EMPLOYMENT IN SELECTED INDUSTRY GROUPS, IN FLORIDA, BASED ON THE YEARS 1947-56

Industry	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
All industries	107.1	107.4	106.7	102.9	98.4	96.2	93.5	93.4	93.7	95.6	100.0	105.1
Retail trade	106.3	108.0	107.6	103.3	97.5	94.9	93.1	92.6	93.5	94.6	99.1	109.5
Service trades	119.0	122.2	120.3	112.5	93.5	89.9	87.7	86.7	85.6	87.0	92.7	102.9
Selected kinds of businesses:												
Eating and drinking places	117.9	125.6	122.3	109.5	93.9	90.2	90.3	87.9	83.7	86.0	91.8	100.9
Hotels	143.6	149.9	147.4	125.1	80.2	72.6	70.6	69.6	66.6	71.5	86.6	116.3
Race track operation	230.7	209.5	189.8	165.7	52.5	39.9	33.6	33.1	32.7	33.1	65.1	114.3
Department stores	101.4	99.7	101.0	100.2	96.1	93.9	90.7	90.5	93.6	98.0	106.2	128.7
Motor vehicle dealers	102.9	102.3	101.7	100.9	100.1	99.9	99.5	98.6	98.4	98.3	98.3	99.1
Grocery stores	103.7	105.8	104.8	100.5	97.8	95.0	95.6	95.8	98.1	98.9	101.4	102.6
Adjustment and credit bureaus	100.0	99.4	98.6	99.9	100.5	99.6	100.5	100.7	100.7	100.5	99.8	99.8
Upholstery and furniture repair	101.9	97.8	95.8	89.0	88.3	89.4	102.7	107.2	111.2	107.7	104.9	104.1
Miscellaneous amusement and recreation services	57.9	77.6	84.1	100.8	112.6	121.9	119.3	122.7	120.3	116.3	103.5	63.0

Source: Calculated from data compiled by the Florida Industrial Commission, 1947-56.

tions from average employment were calculated for the years from 1948 through 1950, and 1953 through 1955. The averages for three-year periods were used in order to reduce the effect of temporary fluctuations in employment that might distort the measure of the number of workers affected if only a single year were utilized. For the period 1948 through 1950 seasonal fluctuations in employment ranged from 31,088 above average in February to 32,269 below average in August. The mean variation was 21,611. For the period 1953 through 1955 the changes in employment due to seasonal causes was 37,668 above average in February and 34,978 below average in August, with a mean variation of 25,650. Thus, it is significant to note that while the percentage of workers affected by seasonal employment fluctuations has declined, total employment in Florida has increased so rapidly that the number of workers affected by seasonal fluctuations has increased during the period studied.

Retail and Service Trades

Since it was not practical to investigate the seasonality of employment in all of the many kinds of businesses and industrial activity in Florida, two broad business groups which seemed likely to show marked seasonal fluctuations in employment were chosen for detailed study: (1) retail trade, and (2) the service trades. Employment in both of these industries is significantly affected by the number of tourists in the state. Therefore, seasonal employment fluctuations in these industries should be far greater than those in total Florida employment. Furthermore, employment fluctuations in these two broad business categories should be more sensitive to a decline in the rate of seasonality over the period studied since there has been a decline in the seasonality of the tourist trade as a result of more summer tourists in Florida. It is generally known that over a period of many years, and especially since World War II, the summer tourist trade in Florida has become increasingly important. This has been true not only in the northern parts of the state where the summer is the most important tourist season, but also in the southern parts of the state.

The seasonal relatives and seasonal indexes for the retail trade and service industries show that seasonal employment fluctuations in these industries closely parallel the fluctuations in total Florida employment. There are no major deviations from the over-all pattern of high employment in winter and low employment in summer. The seasonal indexes for retail trade and service industries are given in Table 2.

While the timing of the seasonal employment fluctuations in these two business divisions is similar to that of over-all Florida employment, both divisions experienced wider seasonal fluctuations than occurred in total employment. The widest range in total employment was 17.6 in 1948. In contrast, the widest yearly range in retail trade was 21.5 occurring in 1949, and the widest range in the service industries was 39.4 in the same year. The average yearly range for the entire period under study was 14.6 for total employment, 17.4 for retail trade, and 36.4 for the service industries.

There is a distinct downward trend in the ranges of the seasonal relatives of each of the three groups. In total Florida employment the yearly range declined from 17.6 in 1948 to 12.1 in 1955, an average annual decrease of 5.0 per cent. The yearly range of the seasonal relatives for employment in retail trade decreased from 21.5 in 1949 to 14.8 in 1955. The average decrease was 4.6 per cent. In the service industries the yearly range decreased from a high of 39.4 in 1949 to 31.0 in 1955, with an average annual decrease of 3.2 per cent.

A comparison between average monthly employment in the first and last three-year periods of the decade studied shows that employment in both industrial divisions grew at a faster rate than did over-all employment in the state. Total Florida employment increased 51.2 per cent, while employment in retail trade increased 54.4 per cent and in the service industries, 55.9 per cent. By 1954-56, 37.2 per cent of total Florida employment was in these industries: 23.7 per cent, in retail trade and 13.5 per cent, in the service industries.

In retail trade, the largest variation was in December when employment due to seasonal causes was 10,601 above average. The largest seasonal reduction in employment, 8,258, occurred in August. Seasonally induced variations from average employment in the service industries ranged from an increase of 13,682 in February to a decrease of 8,875 in August. Average monthly seasonal variation in employment was 6,454 in retail trade and 7,899 in the service industries. As was the case in total Florida employment, the number of workers affected by seasonal employment fluctuations increased during the period studied in both business divisions since the rapid increase in employment more than offset the decrease in the relative size of the seasonal fluctuations.

It is interesting to note that although average employment in retail trade was roughly 80 per cent larger than in the service industries, over 20 per cent more workers were affected by seasonal employment fluctuations in the service industries than in retail trade due to the greater amplitude of the seasonal movements in the service industries.

Particular Kinds of Business

The analysis of total Florida employment and of employment in the retail trade and the service industries has established the pattern of seasonal employment fluctuations in the state and demonstrated that all types of business activities are not equally sensitive to seasonal factors. The next objective is to identify some of the particular areas in which seasonal employment fluctuations are most significant, and to measure the contributions which selected kinds of businesses make to seasonal fluctuations in over-all Florida employment.

The seasonal indexes of selected groups which are typical of the more distinctive types of seasonal employment patterns are listed in Table 2. Seasonal employment fluctuations in the ninety-one industry groups of the retail and service trades vary both in their relative magnitude and timing. The seasonal index of race track operation has the largest range, 197.6. Only two other groups have ranges over 100: theater and theatrical producers, 172.3; and fruit stores and vegetable stands, 141.2. These are extreme values, as only eight of the ninety-one groups have ranges above 60. The group having the smallest range, 2.1, was adjustment and credit bureaus and collection agencies. Forty-seven groups have ranges smaller than the range of total Florida employment, 14.0. One group has the same range as total Florida employment and 43 groups have larger ranges.

The changes in the ranges of the seasonal employment relatives for the ninety-one kinds of businesses are very diverse. The ranges of fifty-six groups were larger in 1953-55 than in 1948-50, the range of one group was unchanged, and the ranges of thirty-four groups declined. Since the ranges of all retail trade and of all service trades, of which these groups are the component parts, declined during this period, the number of groups with increased ranges seems unexpectedly large. However, a check of the average employment figures shows that the group of eating and drinking places is the only one of the industry groups employing a large number of workers in which the range of the seasonal index increased significantly.

An examination of their seasonal employment indexes shows that over half of the ninety-one groups examined have seasonal employment patterns which closely parallel the pattern of total Florida employment. In only fifteen groups does the seasonal employment pattern tend to counteract the state pattern. Moreover, the counter seasonal influence of these groups is minimized as none of these groups has a wide range of seasonal employment fluctuations.

The most significant measure of the contribution that an industry or kind of business makes to the seasonal fluctuations of total Florida employment is the seasonality factor. The factor takes into account the number of workers employed by the group, the size of the group's seasonal employment fluctuations, and the timing of these movements in relationship to the fluctuations of total Florida employment. In essence, a group's mean seasonality factor corresponds to the average number of workers which the group contributes each month to the total number of workers in the state who are affected by seasonal employment fluctuations. When the seasonality factor is positive the group increases the size of over-all employment fluctuations. When the factor is negative, the group decreases seasonal employment fluctuations.

Only six of the ninety-one industry groups had mean seasonality factors above 500. They are hotels, with a mean seasonality factor of 4,929; eating and drinking places, 2,866; race track operation, 989; department stores, 840; limited price variety stores, 733; and laundries and laundry services, 505. Together these six groups accounted for 77.2 per cent of the total positive seasonality factor of the ninety-one groups combined that comprise retail trade and the service industries in Florida. Eight groups had mean seasonality factors between 499 and 100. Although nine groups had negative seasonality factors their impact did not reduce the seasonal fluctuation of total Florida employment appreciably since the combined negative seasonality factor for the nine groups was 414.

Conclusions

The study of the ninety-one industry groups has shown the great diversity of seasonal employment movements in the various groups. Each of the factors studied—number of workers, the relative size of seasonal fluctuations, and the timing of seasonal movements—exhibits this characteristic.

Because of this diversity, a large proportion of the seasonal employment fluctuations generated by these individual business groups is concentrated in a relatively few groups. While each of these important groups employs a comparatively large number of workers, no single factor is responsible for their dominant position. Only groups that have a large work force combined with wide fluctuations in seasonal employment that are timed to coincide with the seasonal movements of total Florida employement materially affect the seasonal variations of over-all employment in the state.